HORIZONTAL REPAIR

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VERSASPEED RMC

RAPID-HARDENING CONCRETE REPAIR MORTAR

EUCLID CHEMICAL

PACKAGING

50 lb (22.7 kg) bags
Code: 083PGU 50

Bulk bags suitable for mixing in ready-mix trucks available (MTO)

APPROXIMATE YIELD

50 lb (22.7 kg) unit: 0.37 ft³ (0.01 m³) per unit when mixed with 4.25 pints (2.01 L) of potable water.

MINIMUM/MAXIMUM APPLICATION THICKNESS

1 inch (2.5 cm) to full depth

CLEAN UP

Clean tools and equipment with water before the material hardens.

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS AND COMPLIANCES

- ASTM C928 Standard Specification for Rapid Hardening Cementitious Materials for Concrete Repairs

DESCRIPTION

VERSASPEED RMC is a fast setting, one component, cementitious, repair mortar that is shrinkage compensated, pozzolan and microfiber modified, and contains an integral corrosion inhibitor. It is designed for horizontal and formed vertical and overhead structural repairs in applications from 1 inch (2.5 cm) to full depth where a faster return to service is required. This material is non-metallic and non-staining.

PRODUCT CHARACTERISTICS

FEATURES/BENEFITS

- Great for projects that require repairs on sloped grades
- Shrinkage compensation and reduction to minimize cracking
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze-thaw resistance
- Pozzolan and microfiber modified
- Contains an integral corrosion inhibitor
- Rapid-hardening allows user to strip forms same day
- Can be coated 5 hours after final set

PRIMARY APPLICATIONS

- Multi-unit residential
- Industrial / commercial / institutional floors
- Bridges
- Roads and highways
- Loading docks
- Equipment bases
- Beams
- Vertical & overhead form and pour applications
- Pavements
- Parking decks and ramps

COMMON METHODS

- Trowelable (horizontal applications)
- Pumpable
- Form and pour

PHYSICAL PROPERTIES

Single component

Mixes with 4.25 pints of potable water per 50 lb bag/pail

Working Time: 20 to 30 minutes

Initial Set: 20 minutes

Final Set: 30 minutes

Physical properties based on measurements at 70 °F in laboratory conditions.

The following coverage rates are approximations based on yield of a 50 lb (22.7 kg) unit mixed at standard consistency.

Application Thickness - inches (mm)	1 (25)	1 1/2 (38)	2 (51)	3 (76)	4 (102)	6 (152)
Coverage Area per Unit - ft² (m²)	4.4 (0.41)	2.9 (0.27)	2.2 (0.20)	1.4 (0.13)	1.1 (0.10)	0.7 (0.07)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Method	Test Property	Values
ASTM C39	Compressive Strength 3" x 6" cylinder	2 hour . . 2,000 psi (13.8 MPa) 1 day. . . . 4,000 psi (27.6 MPa) 3 hours. . 3,000 psi (20.7 MPa) 7 days . . . 6,500 psi (44.8 MPa) 28 days . . . 9,000 psi (62.1 MPa)
ASTM C496	Splitting Tensile Strength	28 days . . . . . 600 psi (4.1 MPa)
ASTM C882	Bond Strength	7 days . . . . . 2,000 psi (14 MPa) 28 days . . . . . 3,000 psi (21 MPa)
ASTM C1202	Rapid Chloride Permeability	28 days . . . . . < 1000 coulombs
ASTM C157*	Length Change	28 day shrinkage . . . . . .< 0.05%
ASTM C138	Fresh Wet Density	140.0 to 145 lb/ft^3 (2242 to 2323 kg/m^3)
ASTM C143	Slump	Initial . . . . . .6 - 10 inches (15.2-25.4 cm)
	Working Time	approximately 20 - 30 minutes
ASTM C403	Set Time	Initial . . . . . . approximately 20 minutes Final . . . . . . approximately 30 minutes
ASTM C666 Procedure A	Freeze/Thaw Resistance	300 cycles . . . > 98% relative dynamic modulus
ASTM C469	Modulus of Elasticity	28 days . . . . . 5.9 x 10^6 psi

*Based on 50% RH @ 23 °C (73 °F) (3" x 3" x 11" beam specimens were removed from molds @ 24 hours)

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP (Concrete Surface Profile) 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean the profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of EUCOWELD 2.0 to a dry substrate or a scrub coat of VERSASPEED RMC to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Formwork: For building forms, refer to ACI 347R - Guide to Formwork for Concrete. Forms should be filled with water 24 hours prior to placement of VERSASPEED RMC to ensure tightness and adequate saturation. Ensure forms are completely drained before pouring of product and any drainage outlets are sealed.

Mixing: Single bags may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60 °F (15 °C) to 85 °F (29 °C). Add the appropriate amount of water for the batch size and then add the VERSASPEED RMC. **The amount of water to be mixed with the VERSASPEED RMC is critical. Initially add 3.5 pints [56 fl.oz.] (1.6 L) of water per 50 lb (22.7 kg) bag and mix for 2 minutes. If after the initial 2 minutes of mixing the desired flow is not obtained, no more than 0.75 pints [12 fl.oz.] (355 mL) of additional water should be added to the mix in order to achieve more flow.** Mix an additional 2 minutes after adding extra water.

Placement: IMPORTANT: The application temperature range of VERSASPEED RMC is from 45 to 95 °F (7 to 35 °C). Allow approximately 30 minutes to mix, place, and finish VERSASPEED RMC repair mortar at 72 °F (22 °C). To make repairs, spread with a float, screed, or square tipped shovel to a thickness that is level with the surrounding concrete. Do not use VERSASPEED RMC for repairs less than 1 inch (2.5 cm) deep. Place product immediately after mixing. Vibration can be used to ensure proper consolidation. If vibration is used, do not vibrate in excess as this can lead to segregation of the aggregate. When placing material, refer to ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

Finishing: Finish the repair material to the desired texture. Do not add water to the surface during the finishing operation. When placing under hot and windy conditions, the use of EUCOBAR evaporation retarder is recommended to prevent the loss of surface moisture.

Curing & Sealing: If an epoxy coating will not be applied, wet cure the surface with water and polyethylene sheets at least one day, or use a curing compound. If applying an epoxy coating, it is important to wet cure with polyethylene sheets for at least 3 hours and then allow to air dry for 2 hours before coating. VERSASPEED RMC can be coated with epoxy 5 hours after final set at 70 °F (21 °C).

PRECAUTIONS/LIMITATIONS

- The application temperature range of VERSASPEED RMC is 45 to 95 °F (7 to 35 °C).
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- Do not extend with aggregate.
- Do not use as an unbonded topping.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.